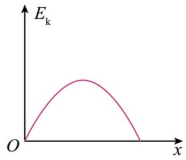
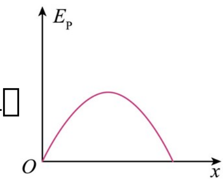
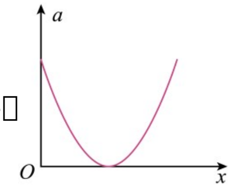
1□□□□□□□□□□□□□□□□x□□□□□□□□□□E_k□□□x□□□□

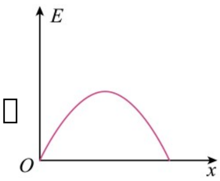
□□□□□□□□□□□E_p□□□□□□a□□□□□□□□□□E□□□φ□□□

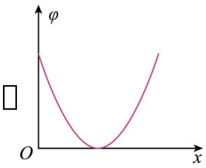
x□□□□□□□□□□□□□□□□　　□



A□ 

B□ 

C□ 

D□ 

2□□□□□□□□□□□□□□□□□□□□□□□□S□□□□□□□□□□□□□

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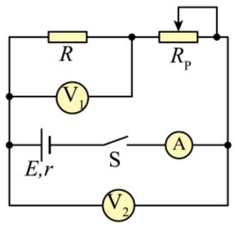


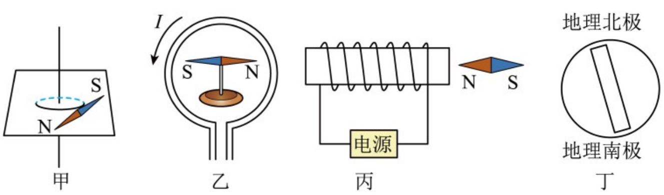
A□□□□A□□□□□

B□□□□V_1□□□□□□□□V_2□□□□

C□□□□□□□□□□□□

D□ΔU_1□ΔU_2□□□□□V_1□V_2□□□□□□□$\left|\frac{\Delta U_1}{\Delta U_2}\right|=\frac{R}{r}$

3□□□□□□□□□□□□□□□□　　□



A□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

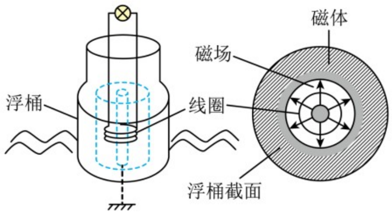
B□□□□□□□□□□□□□□□□□□□□□□□□N□□□□□□□

C□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

D□□□□□□□□□N□□□□□□□□□

4□□

□



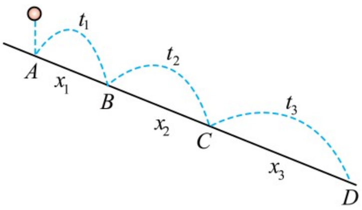
A□□□□□□□□□□□□□□

B□□□□□□□□□□□□□□

C□□□□□□□□□□□□□□□□□□□□□

D□□□□□□□□□□□□□□□□□□□□□□□□□□

5□□A□B□C□D□□□A□B□□B□C□□C□D□□□□□□□□t_1□t_2□t_3□□□□□x_1□x_2□x_3□□□□□□□□□□□□□□□□□□　　□



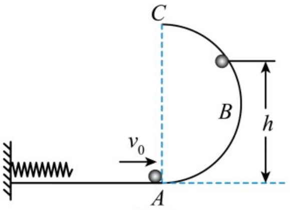
A□$t_1:t_2:t_3=1:1:1$ B□$t_1:t_2:t_3=1:3:5$

C□$x_1:x_2:x_3=1:3:5$ D□$x_1:x_2:x_3=1:2:3$

6□□□ABC□A□□□□□B□□AC□□□A□□□□□□□□□□□□□□□□□□□□A□□□C□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□0.5kg□□□□□□□□□□□□□□$g=10m/s^2$□□□□□

□□□□□□（　　）



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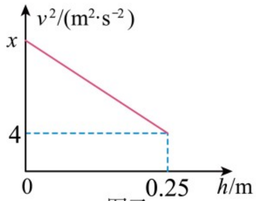


图乙

A□□□□□□□□□□□□□2.25J

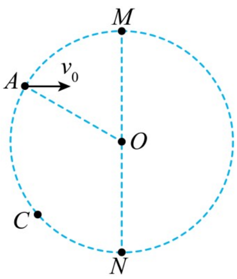
B□□□□□A□□C□□□□□□□□□□30N

C□□□□□A□□□B□□□□□□□□□□□□□□□□□

D□□□□□B□□□□□□□26N

7□□□□□□□□□□□□R□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□B□□□□□$\frac{q}{m}$□□□□□□□□



□□□□□□□□A□□$v_0=\frac{RqB}{m}$□□□□□□

□MN□□□□□□□□N□□□□□

$\angle AON=120^\circ$□□□□□□□□□□（　　）

A□□□□□□□□□□□□□$t=\frac{\pi m}{3qB}$

B□□□□N□□□□□□□□□□□□30°

C□□□□□□□□□□□□□□□□C□□□□□□□□□□□□□□N□□□

D□□□□□□□□□□□A□□□□□N□□□□□□□□□□□□□□□□□□□

$S=\frac{\sqrt{3}\pi R^2}{2}$

8□□□□□□□□□□$L=2m$□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□cd□□□□□□$R_0=2\Omega$□□□□□□

$\theta=37^\circ$□□□□□□□□□□□□□□□□□□□□□□□□□□B_2□□□□□□□□

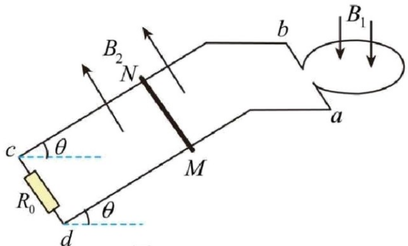
□□□□□□$S=2m^2$□□□□$r=2\Omega$□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□B_1□□□□□□□□□□□□□□□□□□□□$m=1kg$□□

□□MN□□□□□□□□□□□□□□$0-1s$□□□□MN□□□□□□□□□□□

□□□□MN□□□□□□□□□$R=2\Omega$□$\sin37^\circ=0.6$□$\cos37^\circ=0.8$□

g□$10m/s^2$□



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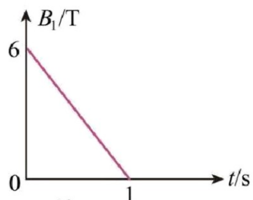

乙

(1)□$0-1s$□ab□□□□U_{ab}□

(2)□□□□□□B_2□□□□

□□□□ □□□□□□□□□□□□□

□□	1	2	3	4	5	6	7			
□□	B	D	A	AC	AD	AB	BC			

1．B□□□□A□□□□□□□□□□□□□□□□□□□□x□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□A□□□

BC□$E_k - x$□□□C□□□B□□□

D□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□D□□□

□□B□

2．D□□□□□□□S□□□

A□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□A□□□

B□□□□V_2□□□□□□□□□□$U_2 = U_□ = E - Ir$□$U_1 = IR$□

□□□□□□□□□□□□□V_1□□□□□□□□V_2□□□□□B□□□

C□□□□□□□$P_□ = U_2 I$□□□□□$R_□$□□□□□r□□□□□□□□□□□□□□□□□□□□□□□□□□□□□R□□□□□□□□□R□r□□□□□□□□□□□□□□□□□□□□□□□□C□□□

D□$\frac{\Delta U_1}{\Delta I} = R$□$\left|\frac{\Delta U_2}{\Delta I}\right| = r$□□□$\left|\frac{\Delta U_1}{\Delta U_2}\right| = \frac{R}{r}$□D□□□

3．A□□□□A□□□□□□□□□□□□□□□□□□□□□□□N□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□A□□□

B□□N□□□□□□□□B□□□

C□□□□□□□□□□□□□□□□□□□□□□□□□S□□□□□□□□□□□□□□□□□□□□□□□C□□□

D□□□□□□□□□N□□□□□□□□□□D□□□

□□A□

4．AC□□□□A□□□□□□□□□□□□□□□□□□□□□A□□□

B□□□B□□□

C□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□C□□□

D□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□D□□□

5．AD□□□□□□□□□□□θ□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□$g\sin\theta$□□□$g\cos\theta$□□□□□□□□□□□□□□□□□T□□□□□□□□□□□□□□□□□□□□□□□□□□2T□

□□$t_1 = t_2 = t_3 = 2T$

□□$t_1 : t_2 : t_3 = 1:1:1$

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□T□□□□□□□1:3:5:7:9:11:13:…□□□

$x_1 : x_2 : x_3 = (3+5):(7+9):(11+13) = 1:2:3$

6．AB□□□□A□□□□□□□□□□□A□□□□C□□□□□□□□□□□□□$-mgh = \frac{1}{2}mv_C^2 - \frac{1}{2}mv_A^2$

□□□□□$h = 0.25\text{m}$□$v_C = 2\text{m/s}$□□□□□□$v_A = 3\text{m/s}$□□□□□□□□□□□□$E_p = \frac{1}{2}mv_A^2 = 2.25\text{J}$□□A□□□

B□□□□□□□□□□□□0.25m□□□□□□$R = \frac{0.25}{2}\text{m} = 0.125\text{m}$

□C□□□□□□□□□□□□$F_C + mg = m\frac{v_C^2}{R}$□$A$□□□□□□□□□□□□$F_A - mg = m\frac{v_A^2}{R}$□□□$A$□□$C$□□□□□□□□

$F_A - F_C = 2mg + m\frac{v_A^2 - v_C^2}{R} = 30\text{N}$□□B□□□

C□□□□□A□□□B□□□□□□□□□□□□□□□□□□□□□□□□□□□□C□□□

D□□□□A□□B□□□□□□□□□□□□□$-mgR = \frac{1}{2}mv_B^2 - \frac{1}{2}mv_A^2$

□B□□□□□□□□□□□$N_B = m\frac{v_B^2}{R}$□□$N_B = 26\text{N}$□□□□□□□□□,

B□□□□□$\sqrt{N_B^2 + G^2} = \sqrt{26^2 + 5^2}\text{N} > 26\text{N}$□□D□□□

7．BC□□□□A□□□□□□N□□□□□□□□□□□□□□□□□□□

$T = \frac{2\pi m}{Bq}$

□□□$AONP$□□□□□□$\alpha = \angle APN = \angle AON$

□□□□□□□□□□□□□$t = \frac{\alpha}{2\pi}T = \frac{2\pi m}{3Bq}$□□A□□□

B□□□□□□□□□□□□$120°$□□N□□□□□□□□□□□□□□$30°$□□B□□□

C□□□□□□□□□□□□□□□□C□□□□□□□□□□□□□□□□□□□□□□□□$SCON$□□□□□□□□□□□□□□□N□□□□□C□□□

D□□□□□□□□□□□A□□□□□N□□□□□□□□□□□□□AN□□□□

□□□□□□□□□□ $S=\pi(\frac{AN}{2})^2=\frac{3\pi R^2}{4}$ □□D□□□

8□(1) $U_{ab}=4\text{V}$ (2) $B_2=1.5\text{T}$

□□□□□1□0-1s□□□□□□□ $E=\frac{\Delta B_1}{\Delta t}S$

□□ $E=12\text{V}$

□□□ $R_{□}=r+\frac{RR_0}{R+R_0}=3\Omega$

□□□ $I=\frac{E}{R_{□}}$

ab□□□□□ $U_{ab}=E-Ir$

□□□□ $U_{ab}=4\text{V}$

□2□□□□□□□□□□□□□□ $B_2I_1L=mg\sin\theta$

□□□□□□□□ $I_1=\frac{U}{R}$

□□□□ $B_2=1.5\text{T}$